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DOCKET No.: H 3609 PCT/US  
RE: METHOD FOR COLORING KERATIN FIBERS  
Application No.: 10/088,247  
Examiner: Elsa B. Elhilo  
Grp/Art Unit: 1751  
Confirmation No.: 9303

Total Pages (including this cover) 11

- Facsimile Transmittal Cover Sheet (1 page)
- Amended Appeal Brief (10 pages)

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**CENTRAL FAX CENTER****OCT 25 2005****PATENT**  
Docket No. H 3609 PCT/US**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Kleen et al.  
Appl. No.: 10/088,247  
Filed: July 26, 2002  
Grp./A.U.: 1751  
Examiner: Eisa B. Elhilo  
Customer No.: 000055495  
Confirm No.: 9303  
Title: METHOD FOR COLORING KERATIN FIBERS

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**AMENDED APPEAL BRIEF UNDER 37 C.F.R § 41.37(d)**

This amended Appeal Brief is in response to the Notification of Non-Compliant Appeal Brief mailed on September 29, 2005. The original Appeal Brief was found to be defective for failure to: (1) contain a concise explanation of the subject matter claimed in each of the independent claims involved in the appeal; and (2) contain a concise statement of each ground of rejection for review. The original appeal was taken from the Final Office Action of September 16, 2004. A Notice of Appeal and payment of the appeal fee under 37 C.F.R. § 1.17(b) was

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timely filed on December 15, 2004.

Applicants believe that this amended appeal brief is completely responsive to the Notification of Non-Compliant Appeal Brief mailed on September 29, 2005 and is fully compliant with the requirements of 37 C.F.R § 41.37(c)(1)(i) through (c)(1)(x).

**I. Real Party In Interest**

The real party in interest in this appeal is the assignee, Henkel Kommanditgesellschaft auf Aktien (Henkel KGaA).

**II. Related Appeals and Interferences**

There are no related appeals or interferences known to applicants, assignee, or their legal representatives that will affect or be affected by or that have a bearing on this appeal.

**III. Status of the Claims**

The claims on appeal are 18-33. Claims 1-17 have been canceled. Claims 34-36 have been allowed. Claims 18-28 and 30-33 are under final rejection and appear in the Claims Appendix. Claim 29, indicated as allowable by the Examiner if rewritten in independent form including all of the limitations of the base claim and any intervening claims, was objected to as being dependent upon a rejected base claim and also appears in the Appendix.

**IV. Status of Amendments**

There are no un-entered amendments.

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**V. Summary of Claimed Subject Matter**

**Claim 18**

The subject matter claimed in independent claim 18 pertains to a process for coloring keratin fibers with dyes and/or dye precursors in which at least one enzyme of the transglutaminase type and at least one active substance with substrate activity for the enzyme are applied to the fibers. (Page 3, line 7 to page 3, line 28, of the specification, as filed).

**Claim 33**

The subject matter claimed in independent claim 33 pertains to a method for improving washing fastness of keratin fibers that have been, are being, or will be colored. The method comprises applying to such keratin fibers at least one enzyme having transglutaminase activity; and at least one active substance having substrate activity for the enzyme having transglutaminase activity. (Page 31, line 29 to page 32, line 2, of the specification, as filed)

**VI. Grounds of Rejection to be Reviewed on Appeal**

Claims 18, 20-25 and 33 stand rejected under 35 USC 103(a) as being unpatentable over Bernard et al. (U.S. 6,274,364).

Claims 19, 26-28 and 30-32 stand rejected under 35 USC 103(a) as being unpatentable over Bernard et al. (U.S. 6,274,364) in view of McDevitt et al. (U.S. 6,051,033).

**VII. Argument**

**Claims 18, 20-25 and 33 stand rejected under 35 USC 103(a) as being unpatentable over Bernard et al. (U.S. 6,274,364)**

Bernard et al. disclose treatments for skin. Specifically, these treatments are directed at reducing intercorneocyte cohesion to ultimately facilitate the desquamation of the skin (col. 1, lines 19-20). However, there is no disclosure of formulations or methods for the treatment of hair.

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Bernard et al. mention transglutaminase activity but only within the context of treating skin (col. 7, lines 4-16). They disclose that their skin treatment formulations may be co-formulated with a variety of different cosmetic treatments. However, even though shampoos, dyeing formulations and hair restructuring lotions are identified within the reference (col. 8, lines 15-24), this is done merely for the purpose of showing that these *skin treatment* compositions be formulated into various other types of compositions.

Bernard et al. disclose that their skin treatment formulations are capable of being blended with other cosmetic treatments, such as hair care formulations. However, they do not disclose that their formulations may be used to *treat* hair. It is respectfully submitted that one skilled in the art of hair treatment formulations would not have sought a solution to the problem of improving the color-fastness of hair colorants from the disclosure of this patent.

**Claims 19, 26-28 and 30-32 stand rejected under 35 USC 103(a) as being unpatentable over Bernard et al.(U.S. 6,274,364) in view of McDevitt et al. (U.S. 6,051,033).**

The Examiner asserts that McDevitt et al. is from the "analogous art of hair treatment formulations". Appellants respectfully take issue with this assertion. First, as stated hereinabove, it is Appellants' position that Bernard et al. do not disclose or teach hair treatment formulations and their methods of use. Further, the disclosure of McDevitt et al. is not directed specifically to the treatment of hair. It relates to methods for treating wool fibers for the purpose of improving shrink resistance, handling, softness and other characteristics that specifically relate to wool products.

The objective of the formulations and methods of McDevitt et al. is to impart desirable characteristics to wool used in clothing and the like. The wool fibers are not treated while on the host animal. Rather, the formulations and methods of this reference are directed to the treatment of bulk fibers. McDevitt et al. do not disclose that their formulations and methods may be used to *color* growing hair on the heads of human beings.

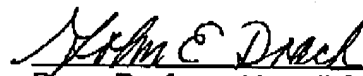
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Appellants respectfully submit that it would not have been obvious to one skilled in the art of human hair coloring to have combined a disclosure dealing with the treatment of skin (Bernard et al.) and a disclosure directed at preventing shrinkage in bulk wool fibers (McDevitt et al.). There is clearly no motivation from these references to combine them in such a manner to have resulted in Appellant's claimed invention.

### CONCLUSION

For the reasons stated above, the Examiner's final rejection of claims 18-28 and 30-33 should be reversed. Should any fees be due for entry and consideration of this Brief that have not been accounted for, the Commissioner is authorized to charge them to Deposit Account No. 04-1406.

Respectfully submitted,



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### VIII. CLAIMS APPENDIX

18. A process for coloring keratin fibers comprising applying to keratin fibers  
(a) at least one colorant comprising at least one dye or dye precursor, or combinations thereof;  
(b) at least one enzyme having transglutaminase activity; and  
(c) at least one active substance having substrate activity for the enzyme having transglutaminase activity.
19. The process of claim 18 wherein the enzyme having transglutaminase activity comprises a calcium-independent transglutaminase.
20. The process of claim 18 wherein the active substance having substrate activity comprises at least one protein or protein hydrolyzate, or combinations thereof.
21. The process of claim 20 wherein the active substance having substrate activity comprises casein, soya protein or wheat protein, or combinations thereof.
22. The process of claim 18 wherein the active substance having substrate activity comprises a substance synthetically functionalized with an  $\text{H}_2\text{N-R}$  group or an  $\text{H}_2\text{N-(CO)-R'}$  group, wherein R and R' represent an unbranched  $\text{C}_{1-8}$  alkylene group.
23. The process of claim 22 wherein the synthetically functionalized substance has at least one  $\text{H}_2\text{N-(CH}_2)_4$  group.
24. The process of claim 22 wherein the synthetically functionalized substance has at least one  $\text{H}_2\text{N-(CO)-CH}_2\text{-CH}_2$  group.

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25. The process of claim 18 wherein the colorant is applied to the keratin fibers, and then subsequently the enzyme having transglutaminase activity and the active substance having substrate activity are applied as a single composition to the keratin fibers.
26. The process of claim 18 further comprising rinsing the enzyme having transglutaminase activity from the keratin fibers after a contact time of 3 minutes to 120 minutes.
27. The process of claim 18 further comprising pretreating the keratin fibers with at least one pretreatment agent before applying the colorant, the enzyme having transglutaminase activity and the active substance having substrate activity.
28. The process of claim 27 wherein the pretreatment agent comprises an oxidizing agent.
29. The process of claim 27 wherein the pretreatment agent comprises a reducing agent.
30. The process of claim 27 wherein the pretreatment agent comprises an enzyme different from the enzyme having transglutaminase activity.
31. The process of claim 18 wherein the colorant, the enzyme having transglutaminase activity, and the active substance having substrate activity are applied simultaneously, or successively in any order.
32. The process of claim 18 wherein (i) the colorant and the enzyme having transglutaminase activity are applied to the keratin fibers in a single composition, (ii) the colorant and the active substance having substrate activity are applied to the keratin fibers in a single composition, or (iii) the active substance having



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substrate activity and the enzyme having transglutaminase activity are applied to the keratin fibers in a single composition.

33. A method for improving washing fastness of colored keratin fibers comprising applying to keratin fibers that have been, are being, or will be colored:

- (a) at least one enzyme having transglutaminase activity; and
- (b) at least one active substance having substrate activity for the enzyme having transglutaminase activity.

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**IX. EVIDENCE APPENDIX**

No evidence is provided.

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**X. RELATED PROCEEDINGS APPENDIX**

There are no relevant judicial or administrative decisions to provide.